CHAPTER

26 Motivation in Education

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Abstract

In this chapter we discuss the nature of children's achievement motivation and how it develops over the school years. We focus on the competence-related belief, value, goal, interest, and intrinsic aspects of motivation that have been emphasized in much of the research on motivation. We then discuss how different aspects of classroom and school practices influence motivation, and how teacher–student relationships and peer relationships impact students' motivation. We next consider how school transitions influence students' motivation, describing important differences in the structure and organization of schools at different levels of schooling. In the final section we describe some recent intervention work to boost children's motivation in different ways. Suggestions for future research include how students' motivation varies in different classroom contexts, the need to study motivation in diverse groups of children, methodological issues with respect to studying motivation, what other kinds of further motivation intervention studies are needed, and how work on motivation can inform educational policy.

Key Words: achievement motivation, development of motivation, motivation and instruction, teacher–student relationships and motivation, peers and motivation

Overview

Motivation theorists are interested in the "whys" of human behavior: what moves people to act (Weiner, 1992). In terms of motivation and education, researchers studying school motivation look at things like the engagement and interest students have in different academic activities, the choices students make about which academic activities to do, their persistence at continuing the activities, and the degree of effort they expend. But what determines individuals' choices, effort, and persistence at different academic activities? Many motivation researchers have focused on students' self-beliefs, values, and goals and how these relate to their achievement behaviors, such as choice, persistence, and performance (Maehr & Zusho, 2009; Ryan & Deci, 2009; Schiefele, 2009; Schunk & Pajares, 2009; Wigfield & Eccles, 2002; Wigfield, Tonks, & Klauda, 2009). Because of this emphasis on *self* variables, much research on motivation has focused on motivation as a characteristic of the individual.

Motivation researchers also recognize the importance of social influences on learning and motivation (Ladd, Herald-Brown, & Kochel, 2009; Wentzel, 2009). Indeed, many researchers and theorists now posit that learning is an inherently social activity (Hickey & Granade, 2004; Vygotsky, 1978). Learning in classrooms is not done in isolation, but instead occurs in the context of relationships with teachers and peers (O'Donnell, 2006; Webb & Palincsar, 1996; Wentzel, 2009). These relationships, and the different roles that emerge for students and teachers in various classrooms, strongly influence how students learn. Furthermore,

opportunities for social interactions around learning have been shown to improve children's achievement in reading and other areas (e.g., Guthrie, McRae, & Klauda, 2007; Johnson & Johnson, 2009). Along with social relationships, it is increasingly clear that the social contexts and organization of classrooms and schools also have major influences on students' motivation and achievement (Nolen & Ward, 2008; Perry, Turner, & Meyer, 2006; Wigfield, Eccles, & Rodriguez, 1998).

In this chapter we discuss children's motivation in school. We begin with a brief discussion of the belief, value, and goal constructs prevalent in current motivation research and how they develop. We then discuss the influence of different aspects of classrooms and schools on the development of students' motivation. We also discuss how school structures change as children move from elementary into secondary school, and how such changes affect students' motivation. We close with discussion of some recent intervention efforts to improve children's motivation.

The Nature of Student Motivation

Researchers have assessed many different constructs that are crucial to students' motivation. To organize our discussion of these constructs, we separate them into two broad groups. One group includes individuals' sense of their competence and agency to achieve different outcomes. Another group concerns intrinsic and extrinsic motivation, interest, values, and goals. Many of these constructs are discussed in greater detail in other chapters in this book.

Individuals' Sense of Competence and Control

Many researchers interested in motivation focus on students' beliefs about their ability and efficacy to perform achievement tasks as crucial motivational mediators of achievement behavior (e.g., Bandura, 1997; Eccles et al., 1983; Wigfield, Tonks, & Klauda, 2009). Ability beliefs are children's evaluations of their competence in different areas. Researchers have documented that children's and adolescents' ability beliefs relate to and predict their achievement performance in different achievement domains like math and reading, even when previous performance is controlled (see Wigfield et al., 2009, for review).

Bandura's (1997) construct of self-efficacy also deals with individuals' sense of competence; however, Bandura defined self-efficacy as a generative capacity where different subskills are organized into courses of action. Bandura (1997) reviewed research showing that individuals' efficacy for different achievement tasks is a major determinant of activity choice, willingness to expend effort, and persistence in and out of school (see also Schunk & Pajares, 2009).

Researchers interested in individuals' control beliefs initially made a major distinction between internal and external locus of control (e.g., Crandall, Katkovsky, & Crandall, 1965; Rotter, 1966. Internal control means the individual believes that he or she controls the outcome; external control means the outcome is determined by other things. Researchers have confirmed the positive association between internal locus of control and academic achievement (see Skinner, 1995). Connell and Wellborn (1991) integrated control beliefs into a broader theoretical framework based on psychological needs for competence, autonomy, and relatedness from self-determination theory (Ryan & Deci, 2009). They linked control beliefs to competence needs: Children who believe they control their achievement outcomes should feel more competent. When the family, peer, and school contexts support children's autonomy, develop their competence, and provide positive relations with others, then children's motivation (which Connell and Wellborn conceptualized as *engagement*) will be positive, and they will become fully engaged in different activities, such as their school work. When one or more of the needs is not fulfilled, children will become disaffected (see Connell, Spencer, & Aber, 1994; Skinner, Kindermann, Connell, & Wellborn, 2009).

Individuals' Intrinsic Motivation, Interests, Values, and Goals

Although theories dealing with competence, expectancy, and control beliefs provide powerful explanations of individuals' performance on different kinds of achievement activities, these theories do not systematically address another important motivational question: Does the individual *want* to do the task? Even if people are certain they can do a task and think they can control the outcome, they may not want to engage in it. Once the decision is made to engage in a task or activity, there are different reasons for doing so. The constructs discussed next focus on these aspects of motivation.

A basic distinction in the motivation literature is between intrinsic motivation and extrinsic motivation (Deci & Ryan, 1985; Harter, 1981). When individuals are intrinsically motivated, they do activities

for their own sake and out of interest in the activity. Deci, Ryan, and their colleagues (e. g., Deci & Ryan, 1985; Ryan & Deci, 2009) went beyond the extrinsic-intrinsic motivation dichotomy in their discussion of *internalization*, the process of transferring the regulation of behavior from outside to inside the individual. They defined several levels in the process of going from external to more internalized regulation: *external*—regulation coming from outside the individual; *introjected*—internal regulation based on feelings that he or she should or has to do the behavior; *identified*—internal regulation of behavior that is based on the utility of that behavior (e.g., studying hard to get grades to get into college); and finally, *integrated*—regulation based on what the individual thinks is valuable and important to the self. Even though the integrated level is self-determined, it still does not reflect intrinsically motivated behavior. Intrinsic motivation only occurs when the individual autonomously controls the behavior, which may not be the case even at the integrated level of regulation.

A construct closely related to intrinsic motivation is interest (Hidi & Renninger, 2006; Schiefele, 2009), and researchers studying interest distinguish between individual and situational interest. As the name implies, individual or personal interest is a characteristic of the individual, and it is conceptualized either as a relatively stable disposition or an active state. Hidi and Renninger (2006) suggested that individual interest includes both knowledge and value about a topic or object and represents an enduring involvement with an activity. By contrast, situational interest stems from conditions in the environment. Hidi and Renninger (2006) described how situational interest generates curiosity, which can lead individuals to explore an activity further and develop individual interest in it. This point is a crucial one for this chapter; features of activities that individuals do in school can increase their personal interest in the activities. Furthermore, there are significant but moderate relations between interest and learning of different kinds (Schiefele, 2009).

Eccles and her colleagues have defined different ways in which individuals can value activities such as schoolwork (see Eccles et al., 1983; Wigfield et al., 2009). Eccles et al. (1983) outlined four motivational components of task value: attainment value, intrinsic value, utility value, and cost. Attainment value refers to the importance of the activity to the individual. Intrinsic value is the enjoyment the individual gets from performing the activity, and so it is conceptually linked to intrinsic motivation and interest (Wigfield & Cambria, 2010). Utility value is determined by how well a task relates to current and future goals, such as career goals. A task can have positive value to a person because it facilitates important future goals, even if he or she is not interested in a task for its own sake. For instance, students often take classes that they do not particularly enjoy but that they need in order to pursue other interests, to please their parents, or to be with their friends. In one sense then this component captures the more "extrinsic" reasons for engaging in a task. But it also relates directly to individuals' internalized short- and long-term goals. Finally, cost refers to what one has to give up to do something else; spending time on homework means less time for socializing with friends.

Eccles and her colleagues have found that individuals' task values predict course plans and enrollment decisions in mathematics, physics, and English and involvement in sport activities even after controlling for prior performance levels (Durik, Vida, & Eccles, 2006; Eccles et al., 1983; Meece, Wigfield, & Eccles, 1990; Simpkins, Davis-Kean, & Eccles, 2006). They have also shown that both competence beliefs and values predict career choices (see Eccles, 2005.

The construct perhaps most directly related to the purposes for doing an activity is achievement goals. Researchers (e.g., Ames, 1992; Dweck & Leggett, 1988; Nicholls, 1984) initially distinguished three broad goal orientations that students can have toward their learning (see Maehr & Zusho, 2009; Elliot, 2005, for review). One orientation, called learning, task involved, or mastery goal orientation, means that the child is focused on improving his or her skills, mastering material, and learning new things. The second goal orientation, called performance or ego orientation, means that the child focuses on maximizing favorable evaluations of his or her competence and minimizing negative evaluations of competence. The different terms used to label the first two goal orientations occurred because different researchers were working on them simultaneously, with each having a somewhat distinctive view of each orientation (see Pintrich, 2000a, and Thorkildsen & Nicholls, 1998). Nicholls and his colleagues (e.g., Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990; Nicholls, Cobb, Yackel, Wood, & Wheatley, 1990) and Meece (1991, 1994) also described a work-avoidant goal orientation, which means that the child does not wish to engage in academic activities. This orientation has received less research attention compared to the others.

In the 1990s, researchers differentiated performance and mastery goal orientations into approach and avoidance components. Elliot and Harackiewicz (1996) and Skaalvik (1997), among others, defined performance-approach goals as students' desire to demonstrate competence and outperform others. Performance-avoidance goals involve the desire to avoid looking incompetent. Elliot (1999; Elliot & McGregor, 2001) and Pintrich (2000b) proposed that the mastery goal orientation also may be divided into approach and avoid components, rather than being solely conceived as reflecting an approach tendency.

One issue with the approach-avoidance distinction that continues among goal orientation theorists is debate about their relative merits of the different kinds of goal orientation. Most goal orientation theorists believe in the benefits of mastery goals for both students and teachers (because they focus students on meaningful learning and improvement) and many of these theorists state that such goal orientations should be focused on more strongly in school. Theorists also agree that performance-avoid goals are debilitating. There is debate, however, about the relative merits of performance-approach goals. Because these goals relate positively to some important achievement outcomes such as grades, some theorists believe that performance-approach goals can be beneficial to students; other theorists continue to think that mastery goals are the most favorable goals students can have. A complete discussion of this debate is beyond the scope of this chapter; interested readers should see Linnenbrink (2005) and Maehr and Zusho (2009).

To conclude this section, researchers have identified a number of important beliefs, value, and goal constructs that impact students' motivation. These variables relate to achievement and choice in many different academic areas. We discussed these constructs individually and many researchers indeed have studied each separately. There is increasing interest currently in how they interrelate and relate to various achievement outcomes (e.g., Harackiewicz, Durik, Barron, Linnenbrink-Garcia, & Tauer, 2008; Wigfield & Cambria, 2010). For instance, having positive competence beliefs, intrinsic motivation, and mastery goals for activities may be the most adaptive pattern for positive motivation.

Researchers also have studied how students' beliefs, values, and goals change across the school years; that is, how they change across the school years; that is the topic of the next section.

Development of Children's Motivation

A substantial body of research shows that children's academic motivation declines across the elementary and secondary school years (see Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2006, for review). Many young children are quite optimistic about their competencies in different areas, and this optimism changes to greater realism and (sometimes) pessimism for many children as they go through school (Fredricks & Eccles, 2002; Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002; Watt, 2004). Children's intrinsic motivation for different academic subjects also declines (Gottfried, Fleming, & Gottfried., 2001), as does their valuing of achievement (Jacobs et al., 2002). Children also appear to focus more on performance goals as they get older (Maehr & Zusho, 2009). Although the pattern of these findings is clear, most of the research just mentioned is normative, describing mean-level change across all children. Researchers have shown that these patterns do vary for children achieving at different levels (Harter, Whitesell, & Kowalski, 1992; Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991); more work of this kind is needed.

These changes have been explained with respect to children's understanding of their performance and changes in the school environments children experience. First, children both receive more information about their performance and learn to interpret it more clearly. Because they are with same-aged peers in school they also learn to compare themselves more systematically with others, which can lead to decreases in motivation for some children (see Wigfield et al., 2009). Second, schools focus more on evaluation and performance outcomes as children go through school, which can negatively impact some children's motivation. We turn next to a more detailed consideration of schooling's influences on students' motivation.

School's Influences on Students' Motivation

How do different kinds of tasks, activities, and structures in school impact children's motivation? How do the relationships children have with their teachers and peers influence their motivation? We focus on these issues in this section.

Tasks and Classroom Practices and Student Motivation

Stipek (1996) reviewed the effects of tasks and classroom practices on student outcomes. She argued that although students do have certain motivational characteristics that they bring with them to the class-

room, teachers and the kinds of environment they provide are primary influences on students' motivation and achievement. Stipek (1996) discussed how teachers can foster motivation by specific classroom practices that enhance achievement-related beliefs, intrinsic motivation, and learning goals.

From her review of the research, Stipek (1996) posited that the classroom practices that are associated with changes in achievement-related beliefs are task-level practices, criteria for success, evaluation, rewards, and teacher behaviors toward students. Task-level practices that are motivating are those with appropriate level of challenge. In addition, tasks should be differentiated over time so that tasks do not become redundant or uninteresting. Next, teachers can foster more positive achievement-related beliefs by creating clear achievable criterion for success and offer rewards for achieving this criterion. Stipek suggested that improvement on previous work be the primary mark of success and students should receive clear and positive feedback about how to attain this goal. Rewards should be given on the basis of improvement, effort, and performance. The final classroom practice that Stipek (1996) discussed as a primary influence on achievement-related beliefs is how teachers treat their students. Teachers' behaviors reflect their beliefs about student competence; therefore, they should avoid treating students of varying abilities differently and express that all students can achieve if they put effort into the task. These classroom practices are associated with student competence beliefs, having an internal locus of control, and holding the perception that achievement is due to effort and not attributable solely to ability. These beliefs are associated with more positive achievement-related beliefs, which are related to positive student outcomes such as help seeking, persistence, effort, and pride in success.

Stipek (1996) also discussed how classroom practices influence intrinsic motivation in students. In this case there is significant overlap with her discussion of fostering achievement-related beliefs. The classroom practices that are associated with intrinsic motivation are use of rewards, evaluation, and task-level practices. When rewards are used as indicators of performance and to provide information as opposed to trying to gain control over students, they can enhance intrinsic motivation (see also Ryan & Deci, 2009). Next, overly emphasizing evaluation has negative effects on intrinsic motivation. Evaluation is best used to inform students about their best or less effective practices as opposed to threatening or controlling evaluation techniques. Similar to the use of rewards, intrinsic motivation is most enhanced when evaluation provides information about progress. Teachers also can foster intrinsic motivation by varying the format of tasks, offering appropriate levels of challenges for students, and allowing choice. Each of these classroom practices is associated with students' perceptions of control over their academic outcomes, mastery goals, and competence beliefs. Increasing these positive beliefs and feelings are associated with task engagement, enjoyment, understanding, and ultimately increased intrinsic motivation.

Stipek (1996) also described the importance of classroom practices on fostering learning or mastery goals. This is important because learning goals (also called mastery or task goals) are associated with developing skills and a desire to master the material. This builds on her discussion of fostering intrinsic motivation in students because it includes each of those practices and is supplemented by several other practices such as adapting instruction to students existing background knowledge, providing opportunities for exploration of the topic, and treating mistakes as an expected part of the learning process. Engaging in these practices is associated with increase in students' goals. Students are more likely to understand, gain skills, and learn and master tasks. These goals are associated with attentiveness, conceptual learning, and feeling satisfaction from gaining knowledge.

Stipek's (1996) discussion of the merit of these instructional practices on achievement-related beliefs, intrinsic motivation, and learning goals was based on observational, correlational, and experimental research; however, these task-level and instructional practices likely interact, and it remains unclear how practices may interact, what the best combination of practices is, and at what magnitude these practices are most helpful for students' motivation and learning.

TARGET

Ames (1992) used the acronym TARGET to describe a set of instructional practices designed to increase the levels of student motivation, especially their mastery goals. She focused on mastery goals because these goals are associated with more time spent on tasks (Butler, 1987) and the amount of effort put into learning (Elliot & Dweck, 1988) than performance goals. TARGET is an evidence-based set of classroom practices that includes task design, authority, recognition, grouping arrangements, evaluation practices, and time allocation.

Strategic design of tasks is the first element of TARGET. Each task should be designed with useful learning goals in mind and use a variety of tasks. The focus of these tasks should be gaining skills and learning. Such thoughtful planning of classroom tasks is associated with increased interest and skills. Distributing authority in the classroom is essential to increasing student autonomy and allows them ownership over their learning by allowing them to make decisions and schedules for their tasks. By shifting autonomy in the classroom from teacher to student, students gain ownership over their learning activities by increasing their participation in classroom choices. This increases mastery goals and interest. Recognizing students' success and improvement is similar to Stipek's (1996) discussion of rewards and evaluation. Students' effort and successes should be recognized and rewarded.

The next element of TARGET is grouping arrangements, which should be organized to promote discussion that leads to a deeper understanding of points and support in the face of challenging tasks. These classroom groups should be heterogeneous and should not reflect ability differences (see Wigfield et al., 1998, for a review of how ability grouping impacts students' motivation). Students generally are aware of ability-based groups, and this is undermining for mastery goals. Evaluation techniques that encourage learning and not normative comparison are essential to TARGET. They should be based on progress and achieving attainable goals. The final piece of a TARGET classroom is time allocation. Allowing students to make decisions about how to pace and schedule their assignments and understanding that students work successfully at difference paces is essential for fostering mastery goals. With respect to enhancing the probability that students adopt a mastery goal orientation, a TARGET classroom structure uses motivational principles that could contribute or contribute multiplicatively toward an orientation to develop new skills.

Teacher–Student Relationships and Student Motivation

There is a growing body of literature that shows how the affective relationships teachers have with students impact students' motivation and achievement in school (see Juvonen, 2006, and Wentzel, 2009, for review). When teachers support students emotionally, they have higher school-related perceptions of competence, clearer positive social and academic goals, and willingness to engage in school activities. These relations emerge even when children's relations with peers and parents are taken into account; research measuring support from all three kinds of socialization agents shows that teacher support is particularly important for academic motivation and adjustment.

Teachers' relations with students are crucial to students' early adjustment in school (Birch & Ladd, 1996), and the emotional quality of student–teacher relations during the early school years predicts growth in their reading and math achievement (Pianta, Belsky, Vandegrift, Houts, & Morrison, 2008). The importance of such relations continues into middle school and beyond. Goodenow (1993) found that students' perceptions of support from teachers and their sense of belongingness in their classrooms related strongly to their perceived valuing of the schoolwork they were doing. Similarly, Wentzel (2002) found that students' academic goals and performance were strongly related to their sense that their middle school teachers were "caring."

Wentzel (2009) noted that much of the work showing how teacher–student relations impact student achievement is correlational and discussed a variety of design and measurement issues that need to be considered in the next generation of this research. These include the complexity of these relations and the need to examine students' impact on teachers along with teachers' impact on students. Additionally, researchers need to take the "nested" nature of these relationships into account; teacher–student relations occur in complex classroom settings and the kinds of relations teachers have with individual students likely is influenced by the relations they have with others in their classes. Wentzel argued that we need a clearer understanding of the mechanisms underlying the observed relations of teacher emotional support and student motivation and achievement.

Peers and Motivation

Peers are another important social influence on motivation. When children are socially supported and accepted by their peers, they have stronger motivation, better achievement outcomes, and are more engaged in school (see Ladd, Herald-Brown, & Kochel., 2009 for review). Furthermore, social competence and social support can help ease school transitions, including the transition from home to school (Ladd et al., 2009. In contrast, socially rejected and highly aggressive children, and also those who are victimized by others, are at risk for poorer achievement and motivation (Birch & Ladd, 1996; Ladd et al., 2009). Moreover, it appears that both the

quantity of children's friendships with peers and the quality of the friendships are related to positive outcomes; in fact, the quality of children's friendships may be especially key, particularly as children move into adolescence (Berndt & Keefe, 1995).

Peer groups in school can have either a positive or negative effect on motivation across various activity settings. Children who come together in peer groups often share similar motivational orientations and activity preferences, and such groupings reinforce and strengthen their existing motivational orientation and activity preferences over time (e.g., Berndt & Keefe, 1995; Kindermann, 1993, 2007). Whether such effects are positive or negative depends on the nature of the peer groups' motivational orientation. High-achieving children who seek out other high achievers as friends develop even more positive academic motivation over time. The role of peer group influences is likely to vary across age. Peers may play an especially important role vis-à-vis motivation and achievement during adolescence, for two reasons: Adolescents are more aware of, and concerned about, peer group acceptance and they spend much more unsupervised time with peers groups than younger children (Rubin, Bukowski, & Parker, 2006). Consequently, adolescents should be especially susceptible to peer group influences on motivation and achievement.

Learning in Groups and Motivation

There is an extensive body of research on how students learn in groups and the impact of students on each others' learning and motivation; much of this work has focused on cooperative learning (see O'Donnell, 2006; Webb & Palincsar, 1996, for systematic reviews of the research on group processes in the classroom, and Johnson & Johnson, 2009, for a review of the effects of cooperative learning). One issue motivation researchers have focused on is how cooperative and competitive reward structures in classrooms influence students' motivation. Ames (1984) discussed how competitive reward structures heighten social comparison and a focus on one's ability relative to others. Cooperative reward structures help children focus on shared effort and interdependence. More broadly, the research on cooperative learning shows that children's achievement often improves, social relations are more positive, and students' motivation is enhanced (Johnson & Johnson, 2009). Peers can also help each other understand and learn the material through group discussion, sharing of resources, modeling academic skills, and interpreting and clarifying the tasks for each other (Cohen, 1994; O'Donnell, 2006). By working together students can create communities of learners and learn to co-regulate each others' motivation and achievement (McCaslin & Good, 1996).

School Transitions and Changes in Student Motivation.

Entrance into kindergarten and then the transition from kindergarten to first grade introduces several systematic changes in children's social worlds (Pianta, Rimm-Kaufman, & Cox, 1999). First, classes are age stratified, making within-age ability social comparison much easier. Second, formal evaluations of competence by "experts" begin. Third, formal ability grouping begins usually with reading group assignment. Fourth, peers have the opportunity to play a much more constant and salient role in children' lives. Each of these changes can impact children's motivational development (Pianta et al., 1999). Unfortunately, very little longitudinal research has focused on this transition and how it influences children's motivation and achievement (one important exception is Pianta and colleagues' work; see Pianta et al., 2008).

Instead, most of the research on the early elementary school years has focused on individual differences in the link between children's early school experiences and their subsequent development. This research suggests significant long-term consequences of children's experiences in the early school years, particularly experiences associated with ability grouping and within-class differential teacher treatment. For example, teachers use a variety of information to assign first graders to reading groups, including temperamental characteristics like interest and persistence, race, gender, and social class (e.g., Alexander, Dauber & Entwisle, 1993; Brophy & Good, 1974). Alexander et al. (1993) demonstrated that differences in first grade reading group placement and teacher–student interactions predict subsequent motivation and achievement even after controlling for initial differences in reading competence. Furthermore, these effects are mediated by both differential instruction and the amplifying impact of ability group placement on parents' and teachers' views of the children's abilities, talents, and motivation (Pallas et al., 1994).

As noted earlier, there are substantial changes in academic motivation and achievement across the upper elementary and secondary school years, including changes in grades, interest in school, perceptions of competence in different areas, and increases in performance goals at the expense of

mastery goals. These changes are particularly large for students who are doing poorly (either emotionally or academically) in school (Lord, Eccles, & McCarthy, 1994). The transition from elementary to middle school can accelerate these negative changes. In explaining them, Eccles et al. (1998) discussed how the multiple changes that occur during this time period (puberty, school transitions, changing relations with parents, increasing cognitive maturity, increasing concern with identity, increasing sexuality and heterosociality, and increasing focus on peer relationships) likely have an impact on students' motivation and achievement. They also discussed how differences in school environments between elementary and secondary schools could contribute to these changes (see also NRC, 2004). Traditional secondary schools differ structurally in important ways from elementary schools. Most secondary schools are substantially larger than elementary schools. As a result, students' friendship networks often are disrupted as they attend classes with students from several different schools. In addition, students are likely to feel more anonymous and alienated because of the large size of many secondary schools. Finally, the opportunity to participate in and play leadership roles in school activities often declines over these school transitions due to the limited number of slots in such niches and the increasing size of the student body. These kinds of changes should affect the students' sense of belonging as well as their sense of social competence.

The nature of instruction also changes: Secondary school instruction is organized and taught departmentally—making it likely that secondary school teachers teach several different groups of students each day and are unlikely to teach any particular students for more than one year. This departmental structure can create a number of difficulties for students. First, the curriculum often is not integrated across different subjects. Second, students typically have several teachers each day with little opportunity to interact with any one teacher on any deeper dimension beyond the academic content of what is being taught and disciplinary issues. As a result, the likelihood of students and teachers forming close, supportive bonds is much less in secondary than in elementary schools.

Finally, grading systems are more likely to be based on social comparative performance, ability level tracking via curricular tracking is common, and teachers are more likely to hold entity, rather than incremental, views of ability differences (Eccles & Midgley, 1989; Wigfield Eccles, & Pintrich, 1996). These characteristics, in turn, are likely to lead to an increase in performance rather than mastery goal focus in the classroom and the school building. As noted earlier, these changes are likely to undermine low-performing students' sense of competence.

Research on the transition to high school suggests that similar changes occur at this transition (Lee & Smith, 2001; Mac Iver et al., 1995; NRC, 2004). For example, high schools are typically even larger and more bureaucratic than middle and junior high schools. Lee and Smith (2001) provide numerous examples of how the sense of community among teachers and students is undermined by the size and bureaucratic structure of most high schools. There is less opportunity for students and teachers to get to know each other and, likely as a consequence, there is distrust between them and little agreement on a common set of goals and values. There is also less opportunity for the students to form mentor-like relationships with the teachers, and there is little effort to make instruction meaningful to the students.

Such environments are likely to undermine the motivation and involvement of many students, especially those not doing particularly well academically, and those who are alienated from the values of the adults in the high school. Furthermore, research based upon both teacher and student reports shows that schools become more socially comparative and competitive in orientation as students progression from elementary to middle to high school (Wigfield et al., 1996). The coincidence of declining social support and increased social comparison and competition at both the middle and high school levels likely contributes to some adolescents' decisions, especially those who are already on the margins of the school community, to withdraw from school prior to graduation (Finn, 1989).

Middle School Reform Efforts and Student Motivation

Based in part on the research just reviewed, during the 1990s different middle school reform efforts were undertaken; many of the recommendations were included in a report by the Carnegie Foundation (1989). There are a number of important ways in which these recommendations have been implemented in different middle schools. One is replacing departmentalized curriculum structures with teams of teachers working with the same group of students. This practice allows groups of teachers to spend more time with the same group of adolescents,

thus getting to know them better. It also allows for greater integration across the curriculum. Teachers serving as advisors and counselors has become more prevalent, so that adolescents can develop closer relationships with their teachers. To create smaller learning communities in often-large middle schools, "schools within schools" have been created, in part through the teaming approach just discussed. This is particularly likely to occur for the youngest group in a middle school, be they fifth graders, sixth graders, or seventh graders. Cooperative learning practices are used more frequently, in part to reduce the use of ability grouping or tracking. Juvonen (2007) discussed middle school reform efforts designed specifically to promote student engagement in school by facilitating social relationships among students and between students and teachers.

Relatively few of the middle school reform efforts focused specifically on students' motivation. An important exception is the work of Maehr and Midgley (1996), who worked with teachers and administrators to change the culture organization and climate of a middle school and an elementary school in a city in Michigan from performance goal based to mastery goal based (similar to Ames, 1992). The school-university team worked extensively to restructure the school toward a focus on mastery goal; they spent 3 years in each school. At the middle school they focused on creating teams of teachers, "schools within the school," lessening the use of ability grouping practices, and changing the student recognition patterns so that not just the "honor roll" students were recognized. They also worked to loosen the rigid bell schedule so that longer class periods were sometimes possible. Changing the school culture in the middle school was very difficulty due to some teachers' (especially the math teachers) resistance to change. Despite these difficulties, the changes had positive effects on students' motivation (E. Anderman, Maehr, & Midgley, 1999).

Even less work has been done on high school reform effort with respect to motivation and the results of this work are less consistent (NRC, 2004). Reform efforts have followed similar principles aimed at creating schools that better meet the competence, belonging, autonomy, and mattering needs of the adolescent students. As is true for the middle school reform efforts, when these principles are well implemented, improvements in students' motivation, school engagement, and academic performance are obtained (NRC, 2004). But successfully implementing these kinds of changes has proven to be very difficult at the high school level.

One of the challenges for motivation researchers is that many of the reform efforts they espouse do not fit well with the current focus on performance, testing, and accountability that are hallmarks of the No Child Left Behind era. The severe pressure that many teachers and principals face to produce higher test scores and other indicators of student performance can lead to a strong focus on performance on the tests used to gauge student growth, at the expense of focusing on how efforts to enhance students' interest and mastery can enhance their performance (Deci & Ryan, 2002). We understand the importance of students showing continual progress in their learning and believe teachers and principals need to be accountable for this progress. However, we also believe that a focus on enhancing students' sense of competence, interest and enjoyment of learning, and mastery also can lead to gains in students' performance, and it is more likely to foster students' healthy development in other areas as well. We turn next to a discussion of some successful interventions that have enhanced students' motivation and achievement

Motivation Interventions

Many researchers studying students' motivation have used correlational methods measuring aspects of students' motivation and relating them to different achievement outcomes, experimental studies done in controlled laboratory settings, or classroom-based observation studies. From this work we now have a substantial body of information about the nature of students' motivation and how different teaching practices and classroom environments impact motivation and achievement. There is a growing body of work examining the effectiveness of different kinds of interventions designed to improve students' motivation; we discuss examples of this kind of work in this section (see also Wentzel & Wigfield, 2007). This work can be done at different levels, including working with individual students to improve aspects of their motivation such as their self-efficacy or changing their failure attributions to focus on lack of effort rather than lack of ability (e.g., Dweck, 1975; Schunk, 1983) or working at the classroom or school levels; we focus here on the latter kind of work.

Blackwell, Trzesniewski, and Dweck (2007) provided seventh grade students with an eight-session intervention designed to help them develop an incremental rather than entity view of their ability. Dweck and her colleagues have shown that students who believe that their intelligence is incremental

or modifiable are more positively motivated than those who believe it is fixed (see Dweck & Master, 2009, for review). The intervention involved teaching children that they can grow their intelligence through their efforts and students were assigned randomly by classroom to the intervention or control group. The intervention produced significant changes in the intervention group's theories of intelligence; these children became more incremental in their views about their intelligence. Overall, students' math grades declined over the course of the year; this decline was reversed for the students in the intervention group. Interestingly, there was an (marginally significant) interaction of student's initial theory of intelligence and condition showing that students who initially endorsed the entity view of intelligence were most impacted by the intervention with respect to their grades. The decline in grades for such students in the intervention group reversed, whereas for control group students holding this view the decline continued. Blackwell et al. concluded that altering students' views of their intelligence impacted both their motivation and mathematics achievement.

Felner, Seitsinger, Brand, Burns, and Bolton (2007) reviewed their work on reforming middle schools to create effective small learning communities in middle school. They call their approach the High Performance Learning Communities Project (Project HiPlace). Project HiPlace is being conducted in middle schools across the country, including many middle schools serving minority students living in poverty. Felner and his colleagues have conducted a number of large-scale studies on the effectiveness of Project HiPlace, and they have documented that creating smaller learning communities in middle school has positive effects on students' motivation and achievement.

Balfanz, Herzog, and Mac Iver (2007) and other colleagues developed a system for identifying middle school students who are most at risk for academic disengagement and later dropping out of school. They focus on student grades, attendance, and behavior in school (as rated by the teacher) as possible indicators of disengagement, and they examine how each of these factors individually and together affect student engagement and school attendance over the middle and high school years. These researchers also developed and evaluated a middle school reform effort called the Talent Development Middle School Project, a broad-scale instructional program implemented in urban middle schools in Philadelphia and other cities. Talent Development includes instruction in math, English, and science. The program focuses on developing strong learning communities and providing an engaging curriculum in each subject area. Analyses of the effects of the program on student outcomes indicate that the program has been effective in improving student achievement and engagement because the specific kinds of instruction are important for motivation and achievement.

Guthrie, McRae, and Klauda (2007) review the research on how different kinds of reading instruction programs influence motivation and achievement, focusing specifically on Concept-Oriented Reading Instruction (CORI), a reading comprehension instruction program that integrates science and reading. CORI focuses on instructional practices to enhance students' motivation for reading and ability to use cognitive reading strategies. The classroom practices that are designed to enhance reading motivation include increasing personal relevance of the material being learned, providing choices with respect to learning activities, ensuring enough success that students' self-efficacy is fostered, giving many opportunities for student collaboration, and teaching in thematic units so that students have clear content goals for learning. Guthrie et al.'s meta-analysis of the work to date on CORI's effectiveness in boosting students' reading motivation, reading comprehension, and strategy use showed that CORI is indeed effective in increasing these outcomes for students in grades 3–5.

Hudley, Graham, and Taylor (2007) focused on a somewhat different issue that has implications for students' school engagement and achievement, helping students interact more positively with their peers. Their interventions focus on reducing elementary school aged children's aggression toward peers. Many of their interventions have been conducted with African American boys. The theoretical grounding of their work is attribution theory, a theory that characterizes individuals' understanding of their own and others' actions. Hudley et al. discuss how aggressive children often interpret the acts of others as hostile, even when the intention behind the act is benign. Their interventions focus on changing these children's interpretations of others' actions, and reducing their aggressive responses to other children. Results of studies evaluating the effectiveness of the interventions show that they have had positive effects both on students' social behavior and attitudes, and academic motivation. Hudley et al. discuss how this work shows that children's social behaviors indeed can be altered in

positive ways during the elementary school years, leading to increased achievement or improved motivation. They also discuss the importance of tailoring the interventions to the cultural and ethnic backgrounds of the participants, in order for the interventions to be optimally effective.

In sum, research on the nature of motivation has informed important interventions that aim to increase motivation in various domains, increase achievement, and improve students' social behaviors and perceptions. Work is needed to take these successful interventions to scale and to examine them for different groups of children and children of different ages.

Conclusion and Future Directions

We have learned much about the nature of students' motivation and how it changes across the school years. We also have learned much about how different kinds of tasks, activities, and other characteristics of school and classroom environments impact students' motivation, as well as how teacher–student and peer relations influence motivation. Although the frequently observed declines in student motivation continue to be cause for concern, various motivation-based intervention studies have shown that the declines can be reversed. We have a growing body of knowledge about how students' motivation can be enhanced in classrooms, which is a reason for optimism. We close our chapter with some issues that need research attention over the next few years.

How Do Different Classroom Contexts Influence Students' Motivation?

Perry et al. (2006) reviewed research on how the interactions among students, teachers, and the contextual features of different classrooms impact students' motivation. They take a sociocultural approach to student motivation and learning, arguing that students' participation in different classroom environments and interactions with others co-create motivation. They discuss research on some of the same topics that Stipek (1996) reviewed such as how different kinds of academic tasks influence students, how different kinds of instructional practices influence students, and how teacher–student relations and student–student relations influence motivation. They agree with many of Stipek's points about instructional practices and tasks, but they note that the dynamic and complex nature of classrooms means that the practices may have different meanings in different classrooms.

A number of motivation researchers taking sociocultural approaches to motivation have made similar points about the dynamic, situation-based nature of motivation (Hickey, 1997, 2008; Hickey & Granade, 2004; Nolen, 2007; Nolen & Ward, 2008; Urdan, 1999). These researchers argue that motivation is not a stable individual characteristic that operates similarly in different settings. Additionally, classrooms themselves are fluid structures that change depending upon who is in them and the mutual influences teachers, students, and activities all have on one another. Motivation theorists taking a sociocultural perspective challenge some of the premises of the social cognitive models of motivation that focus on the individual, and they also challenge the notion that practices thought to optimize motivation will operate similar in different classrooms (see in particular Hickey, 2008, and Hickey & Granade, 2004). An important research implication of these points is that we need to look carefully at how practices shown to facilitate motivation operate in different classroom settings, to understand the breadth of their impact as well as their limits.

How Does Motivation Vary in Different Groups of Children?

Researchers studying children's motivation have long been interested in group differences, with a particular focus on gender and ethnic differences in motivation (see Graham & Hudley, 2005; Meece, Glienke, & Askew, 2009; Murdock, 2009; and Wigfield et al., 2006 for review). This work shows that boys' and girls' competence-related beliefs and values tend to follow gender stereotypic patterns, with boys having more positive beliefs and values in domains such as math and sports, and girls in reading/English and music (Eccles, 1984; Eccles et al., 1993). More recent studies that these patterns may be changing; for instance, Jacobs et al. (2002) did not find significant gender differences in value of math, though gender differences in competence beliefs in math (favoring boys) and English (favoring girls) were found, along with gender differences in English value (favoring girls) and sport value and competence beliefs favoring boys.

Furthermore, researchers working in other countries find somewhat different patterns in gender differences in children's competence and values (Watt, 2004). The changing patterns in gender differences as well as the different findings from studies done in different cultural context demonstrate the importance of continuing to assess gender differences in achievement motivation.

With respect to ethnic differences in motivation, some research shows that African American children have more positive competence beliefs than do European American children, but that these beliefs do not relate as strongly to achievement for the African American children (see Graham, 1994). Graham, Taylor, and Hudley have found interesting interactions of ethnicity and gender, using a peer nomination measure asking who students admire in their school that they describe as a way to measure task value (Graham, Taylor, & Hudley, 1998; Taylor & Graham, 2007). They found that during elementary school African American, European American, and Hispanic American children chose students who were fashionable, athletic, and high achievers as ones they admired; females in all groups and European American boys continued to do so in middle school. However, in middle school African American and Hispanic American males nominated classmates who were fashionable and athletic but who were not high achievers. This work shows why it is important to consider gender and ethnicity together, as there are different patterns for boys and girls in different ethnic groups with respect to motivation-related beliefs.

Researchers interested in ethnic differences in motivation point to broader cultural and societal issues such as the perceived opportunity structure for different groups (e.g., if I work hard in school, will it lead to more economic opportunities for me and members of my group), discrimination, and stereotypes about the capabilities of individuals from different groups as impacting motivation and achievement (Aronson, 2002; Graham & Hudley, 2005; Murdock, 2009). The complex influences of these factors on students' motivation need further research attention.

How Should Motivation Be Studied?

Much of the research on children's beliefs, values, interests, and goals has relied on self-report questionnaires. There are numerous reasons why student self-report is a good way to measure motivation; if one is interested in measuring individuals' beliefs, then self-report needs to be used. However, such measures are subject to social desirability effects, and it is challenging to use them in studies of young children, despite the efforts of researchers to develop good measures for use with younger children.

We urge researchers to include other kinds of measures along with participant self-report measures, to get a more complete picture of students' motivation-related beliefs, values, and goals, their interrelations, and relations to outcomes. Classroom observations and interviews can provide a richer depiction of situated motivation. Measures of actual choices, persistence, and effort can provide information about outcomes tied to motivation. Teacher and parent ratings of children's motivation have been used successfully, and they have been shown to relate to various achievement outcomes (e.g., see Wigfield et al., 2008 for a teacher rating measure of student engagement). Having multiple informants and multiple kinds of measures adds complexity to a study, but it has many benefits as well.

What Are the Next Steps in Motivation Interventions?

We are encouraged by the results from the different motivation intervention studies discussed earlier. There are several important next steps for research of this kind. We continue to need both quasi-experimental and randomized trial design intervention studies done in classrooms, to build a strong experimental support for effective interventions. Second, we need to do these kinds of studies at different grade levels, to see how effective programs are with different aged students, and how they need to be modified for use with students of different ages. We predict that it may be easier to change students' motivation when they are younger, before long-term patterns of failure and avoidance set in for children performing poorly in school. However, because some motivation problems emerge later we need effective interventions for middle and high school students as well.

What Are the Implications of Motivation Research for School Reform?

As noted earlier, many of the principles derived from research on motivation about how to enhance students' motivation in school do not mesh well with the current press for more assessments and evaluation of student performance, and teacher and principal accountability for student performance on these tests. These pressures can lead to a strong focus on teaching to the tests being used and the (sometimes) surface learning needed to do well on such tests, rather than a deep engagement in meaningful and interesting learning activities. We do not believe that the motivational principles we have discussed are antithetical to student achievement in school; indeed, we think that when students believe they are competent, see that what they are learning is relevant and interesting, and have the goals of mastering material and increasing their skills they will

perform very well in school. Motivation researchers, particularly those doing intervention work, should work with policy makers to be sure that motivation is included in the debates about effective education policy and how best to assess children's learning and promote both achievement and motivation. One good example of this type of work is the National Research Council's (2004) book on engaging schools. More of this kind of work is needed.

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